UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _11/2/2005_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-25 and 27-31_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-25 and 27-31_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Response to Arguments

2.   Applicant's arguments with respect to claims 1, 6, 8, 12, 18, 20, 22, and 27 have

been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

3.   Claim 1-3, 5-6, 11, 22-26, 28, and 31 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Arao.

Regarding claim 1, determining whether a signal fail (SF) has occurred at a

source station is disclosed in Arao, column 2, lines 66-67 (disclosing SFs). Determining

whether a priority of the SF is higher than a priority of an existing SF if the SF is

determined to have occurred is disclosed in column 3, lines 4-5 (an SD is a type of

signal failure, it is lower priority than a full SF, both are switching requests) and 30-32

(priority is given to higher level switching request if the requests are contending for the

protection line; the requests must exist at the same time to contend). Determining

whether a target station uses a same protocol as the source station if the priority of the

SF is determined to be higher than the priority of the existing SF is not specifically

disclosed in Arao. However, Arao discloses in column 4, lines 6-8, that the source

sends the K1 byte to the target. The target would not know to respond to the K1 byte if it were not using the same protocol, so the source will know whether the target uses the same protocol by whether a response to the K1 byte is received. It would have been obvious to one skilled in the art at the time of the invention to determine whether the target station uses the same protocol as the source station. The motivation would be to know whether the target would understand the switching request sent by the source, to know whether the switching operation will occur. Performing a switching operation if the same protocol is determined to be used by the target station, and transmitting a switching notification signal from the source station to the target station is disclosed in column 4, lines 13-16 (the source switches if it receives a response from the target, and sends the switch response to the target).

Regarding claim 2, the switching operation is performed by the source station is disclosed in column 4, lines 13-15.

Regarding claim 3, the target station performs the switching operation upon receiving the switching notification signal from the source station is disclosed in column 4, lines 8-10.

Regarding claim 5, upon receiving the switching notification signal transmitted from the source station to the target station and transmitting a second switching notification signal from the target station to the source station, and switching from a working side of the target station to a protection side thereof, the protection side being in a standby mode is disclosed in column 4, lines 13-18.

Regarding claim 6, defining K1 byte at the source station, the K1 byte being

unused, and transmitting the resulting K1 byte from the source station to the target

station; and determining that the target station is of a same protocol if the target station

responds to the transmitted K1 byte is disclosed in column 4, lines 6-8 (the stations

would not be able to communicate, and hence would know that they are not the same

protocol, if the target station did not respond to the K1 byte).

Regarding claim 11, if a signal degrade (SD) status is detected at the source

station having a higher priority then an existing SD status, the switching operation is

performed if a data-grade signal is being transferred is disclosed in column 3, lines 1-3

(disclosing signal degrades) and column 30-45 (disclosing different priorities among

signal requests; the switching operation would occur for a data-grade signal or any

other type of signal, depending on the priority).

Regarding claim 22, a first station, having a first working side and a first

protection side; and a second station, having a second working side and a second

protection side is disclosed in column 1, lines 10-11 (disclosing working and protection

sided) and column 4, lines 6-18 (disclosing switching between sides). The first and

second working sides being coupled by a working channel and the first and second

protection sides being coupled by a protection channel is disclosed in figure 2 (showing

a station with working and protection lines, it is coupled to other stations). The first

station is configured to determine whether a signal fail has occurred at the first station,

and determine whether the second station uses a same protocol as the first station is

not specifically disclosed in Arao. However, Arao discloses in column 4, lines 6-8, that

the source sends the K1 byte to the target. The target would not know to respond to the K1 byte if it were not using the same protocol, so the source will know whether the target uses the same protocol by whether a response to the K1 byte is received. It would have been obvious to one skilled in the art at the time of the invention to determine whether the target station uses the same protocol as the source station. The motivation would be to know whether the target would understand the switching request sent by the source, to know whether the switching operation will occur. Performing a switching operation if the protocol is determined to be the same is disclosed in column 4, lines 13-16 (disclosing performing the switching operation upon receipt of the confirmation from the target). The first station determining whether a priority of the signal fail is higher than a priority of an existing signal fail when a signal fail is detected while the existing signal fail is present is disclosed in column 3, lines 4-5 (an SD is a type of signal failure, it is lower priority than a full SF, both are switching requests) and 30-32 (priority is given to higher level switching request if the requests are contending for the protection line; the requests must exist at the same time to contend).

Regarding claim 23, the switching operation comprises switching from the first working side to the first protection side and transmitting a switching notification signal to the second station is disclosed in column 4, lines 8-10.

Regarding claim 24, the second station transmits a second switching notification signal to the first station upon receiving the switching notification signal from the first station, and wherein the second station performs a switching operation from the second working side to the second protection side is disclosed in column 4, lines 13-16.

Regarding claim 25, the first station switches from the first working side to the

first protection side if the signal fail has occurred in the first working side is disclosed in

column 1, lines 10-11 (disclosing switching from working to protect) and column 4, lines

6-18 (disclosing switching when there is a failure).

Regarding claim 28, the first station determines whether the second station uses

the same protocol by defining an unused K1 byte and transmitting it to the second

station, and determining that the second station is of the same system type if the

second system responds to the transmitted K1 byte within a prescribed period of time is

disclosed in column 4, lines 6-8 (the stations would not be able to communicate, and

hence would know that they are not the same protocol, if the target station did not

respond to the K1 byte).

Regarding claim 31, the ATM switch is configured to provide a 1+1 bi-directional

switching operation is disclosed in figure 19 and column 9, line 11 of Arao.

4.   Claims 4 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Arao in view of Rajan.

Regarding claim 4, priority is higher when a protection side of the source station

is active, than when a working side of the source station is active is missing from Arao.

However, Rajan discloses in column 4, lines 66-67, that a protection failure is the

highest priority failure. It would have been obvious to one skilled in the art at the time of

the invention to use the protection hierarchy of Rajan in the system of Arao. The

motivation would be to customize the type of protection for different equipment types

(Rajan, column 4,lines 59-61).

Regarding claim 27, the priority is determined to be higher when the first

protection side is active than when the first working side is active is missing from Arao.

However, Rajan discloses in column 4, lines 66-67, that a protection failure is the

highest priority failure. It would have been obvious to one skilled in the art at the time of

the invention to use the protection hierarchy of Rajan in the system of Arao. The

motivation would be to customize the type of protection for different equipment types

(Rajan, column 4,lines 59-61).

5.   Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Arao in view of Afandor.

Regarding claim 7, performing associated switching operations by the target and

source stations after checking signals from each other, if it is determined that the target

station does not use the same protocol is missing from Arao. However, Afandor

discloses in column 1, lines 27-39, and column 2, lines 36-37, protection switching in a

1+1 line network containing different protocols. It would have been obvious to one

skilled in the art at the time of the invention to perform the protection switching

operations in the presence of different protocols. The motivation would be to avoid

providing separate and independent switching networks for each protocol (Afandor,

column 2, lines 34-35).

Regarding claim 8, transmitting a switching request signal from the source station

to the target station upon detection of the SF; transmitting a reverse request signal to

the source station from the target station in response to the switching request signal;

performing the associated switching operation by the source station upon receiving the

reverse request signal and transmitting a source switching notification signal to the

target station; and upon receiving the switching notification signal at the target station,

performing the associated switching operation in a manner identical to the source

station, and transmitting a target switching notification signal to the source station is

disclosed in column 4, lines 6-18.

6.   Claims 9 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Arao in view of Richardson.

Regarding claim 9, the SF is at least one of a Loss of Signal (LOS) condition, a

Loss of Frame (LOF) condition, and an Alarm Indication Signal (AIS) is missing from

Arao. However, Richardson discloses in column 9, lines 6-7, that LOS, LOF, and AIS

are all types of signal failures. It would have been obvious to one skilled in the art at the

time of the invention to define the SFs of Arao as the types listed in Richardson. The

motivation would be to deal with known types of signal failures.

Regarding claim 29, the signal fail comprises at least one of a Loss of Signal

(LOS) condition, a Loss of Frame (LOS) condition, and an Alarm Indication Signal (AIS)

is missing from Arao. However, Richardson discloses in column 9, lines 6-7, that LOS,

LOF, and AIS are all types of signal failures. It would have been obvious to one skilled

in the art at the time of the invention to define the SFs of Arao as the types listed in

Richardson. The motivation would be to deal with known types of signal failures.

7.   Claims 10 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Arao in view of Richardson in further view of Naito.

Regarding claim 10, the AIS occurs by at least one of a separation of a circuit board, a fault in a circuit board, and a fault in a line of a transmitting or receiving device is missing from Arao. However, Naito discloses in column 1, lines 40-49, that line faults cause an AIS. It would have been obvious to one skilled in the art at the time of the invention to have a line fault cause an AIS. The motivation would be to follow the published standards (see Naito, lines 40-49).

Regarding claim 30, the AIS occurs by at least one of a separation of a circuit board, a fault in a circuit board, and a fault in a line of a transmitting or receiving device is missing from Arao. However, Naito discloses in column 1, lines 40-49, that line faults cause an AIS. It would have been obvious to one skilled in the art at the time of the invention to have a line fault cause an AIS. The motivation would be to follow the published standards (see Naito, lines 40-49).

8.   Claims 12, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arao in view of Nakajima.

Regarding claim 12, determining whether a new signal fail (SF) has occurred in a working side of a source station, the working side being in an active mode is disclosed in Arao, column 2, lines 66-67 (disclosing SFs) and in the column 1, lines 10-11 (disclosing a working line on the switches, an SF may occur in the working line, which in normal state is the active line). Determining whether a priority of the new SF is higher than a priority of a current SF if the new signal fail is determined to have occurred is disclosed in column 3, lines 4-5 (an SD is a type of signal failure, it is lower priority than a full SF, both are switching requests) and 30-32 (priority is given to higher level

switching request if the requests are contending for the protection line; the requests

must exist at the same time to contend). Determining whether a target station uses a

same protocol as the source station if the priority of the new SF is determined to be

higher than the priority of the current signal fail is not specifically disclosed in Arao.

However, Arao discloses in column 4, lines 6-8, that the source sends the K1 byte to the

target. The target would not know to respond to the K1 byte if it were not using the

same protocol, so the source will know whether the target uses the same protocol by

whether a response to the K1 byte is received. It would have been obvious to one

skilled in the art at the time of the invention to determine whether the target station uses

the same protocol as the source station. The motivation would be to know whether the

target would understand the switching request sent by the source, to know whether the

switching operation will occur. Determining whether a protection side of the source

station is in a normal state if the target station is determined to be of a same system

type as the source station based on the protocol is missing from Arao. However,

Nakajima discloses in column 5, lines 38-42, checking whether a protection line is in

normal state before performing a switching operation. It would have been obvious to

one skilled in the art at the time of the invention to check the protection line before

performing switching. The motivation would be to not switch a connection onto an

unusable line. Performing a switching operation if the protection side of the source

station is determined to be in its normal state, and transmitting a source switching

notification signal to the target station is disclosed in column 4, lines 6-18 (disclosing

switching sides and sending notification) and column 1, lines 10-11 (disclosing switching

between the working and protect sides).

Regarding claim 14, receiving the source switching notification signal transmitted

by the source station at the target station; and transmitting a target switching notification

signal from the target station to the source station and performing the switching

operation from a working side of the target station to a protection side thereof, the

protection side being in a standby mode is disclosed in column 4, lines 13-18.

Regarding claim 15, determining whether the target station uses the same

protocol comprises: defining a K1 byte at the source station, the K1 byte being unused,

and transmitting the resulting K1 byte to the target station; and determining that the

target station is of the same system type if the target station responds to the transmitted

K1 byte signal within a prescribed period of time is disclosed in column 4, lines 6-8 (the

stations would not be able to communicate, and hence would know that they are not the

same protocol, if the target station did not respond to the K1 byte).

9.   Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arao in

view of Nakajima in further view of Rajan.

Regarding claim 13, a priority when the protection side is active is higher than a

priority when the working side is active is missing from Arao. However, Rajan discloses

in column 4, lines 66-67; that a protection failure is the highest priority failure. It would

have been obvious to one skilled in the art at the time of the invention to use the

protection hierarchy of Rajan in the system of Arao. The motivation would be to

customize the type of protection for different equipment types (Rajan, column 4,lines 59-61).

10.   Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arao in view of Nakajima in further view of Afandor.

Regarding claim 16, performing associated switching operations by the target and source stations after checking signals from each other, if it is determined that the target system is not of the same system type is missing from Arao. However, Afandor discloses in column 1, lines 27-39, and column 2, lines 36-37, protection switching in a 1+1 line network containing different protocols, or system types. It would have been obvious to one skilled in the art at the time of the invention to perform the protection switching operations in the presence of different protocols. The motivation would be to avoid providing separate and independent switching networks for each protocol (Afandor, column 2, lines 34-35).

Regarding claim 17, performing associated switching operations comprises: transmitting a switching request signal from the source station to the target station upon detection of the new SF; transmitting a reverse request signal from the target station to the source station in response to the switching request signal, upon receiving the reverse request signal at the source station, performing the associated switching operation and transmitting a source switching notification signal to the target station; and upon receiving the source switching notification signal at the target station, performing the associated switching operation in a same manner as the source station,

and transmitting a target switching notification signal to the source station is disclosed in column 4, lines 6-18.

11.   Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arao in view of Nakajima in further view of Richardson.

Regarding claim 18, the new signal fail is at least one of a Loss of Signal (LOS) condition, a Loss of Frame (LOF) condition, and an Alarm Indication Signal (AIS) is missing from Arao. However, Richardson discloses in column 9, lines 6-7, that LOS, LOF, and AIS are all types of signal failures. It would have been obvious to one skilled in the art at the time of the invention to define the SFs of Arao as the types listed in Richardson. The motivation would be to deal with known types of signal failures.

12.   Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arao in view of Nakajima and Rajan in further view of Naito.

Regarding claim 19, the AIS occurs by at least one of a separation of a circuit board, a fault in a circuit board, and a fault in a line of a transmitting or receiving device is missing from Arao. However, Naito discloses in column 1, lines 40-49, that line faults cause an AIS. It would have been obvious to one skilled in the art at the time of the invention to have a line fault cause an AIS. The motivation wwould be to follow the published standards (see Naito, lines 40-49).

13.   Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arao in view of Chang.

Regarding claim 20, detecting whether a signal fail (SF) has occurred in a side of a source station is disclosed in Arao, column 2, lines 66-67 (disclosing SFs).

Determining whether a priority of the SF is higher than a priority of an existing SF is

disclosed in column 3, lines 4-5 (an SD is a type of signal failure, it is lower priority than

a full SF, both are switching requests) and 30-32 (priority is given to higher level

switching request if the requests are contending for the protection line; the requests

must exist at the same time to contend). Performing a switching operation from the side

thereof to another side of the source station after determining whether a signal fail has

occurred and after determining that the priority of the SF is higher than the priority of the

existing SF, and transmitting a switching notification signal to a target station; and upon

receiving the switching notification signal at the target station, transmitting a switching

notification signal from the target station to the source station and performing a

switching operation from a side of the target station to another side thereof is disclosed

in Arao, column 4, lines 6-18. That the failure occurs in the protection side, and

switching is done from the protection side to the working side, is missing from Arao.

However, Chang discloses in column 4, lines 36-42, a system that switches from

working side to protection side in case of a fault, and then later switches back from the

protection side to the working side in case of a fault on the protection side in the same

manner that it switched from working to protect. It would have been obvious to one

skilled in the art at the time of the invention to switch from the protection side to the

working side in case of a failure in the protection side. The motivation would be to be

able to deal with failures anywhere in the network.

Regarding claim 21, determining whether a protocol of the target station matches

a protocol of the source station by defining a K1 byte at the source station, the K1 byte

being unused, and transmitting the resulting K1 byte to the target station; and

determining that the target station is of the same system type if the target station

responds to the transmitted K1 byte signal within a prescribed period of time is

disclosed in Arao, column 4, lines 6-8 (the stations would not be able to communicate,

and hence would know that they are not the same protocol, if the target station did not

respond to the K1 byte).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-

3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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CLD
12/28/2005

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